YT1-1637-000

ENGLISH

Canon

Network Camera

VB-H610VE/VB-H610D/VB-M600VE/VB-M600D

Installation Guide

Thank you for purchasing Canon Network Camera VB-H610VE/VB-H610D/VB-M600VE/VB-M600D (hereafter referred to as the camera).
VB-H610D/VB-M600D is designed for indoor use only. It is also possible to install the VB-H610VE/VB-M600VE outdoors, such as underneath eaves.
Be sure to read "Installation Guide" (this document) and "Operation Guide" (included in the Setup CD-ROM) before use.
This "Installation Guide" explains the installation method for installing the camera on a ceiling or wall and the installation method using the separately sold junction box mounting kit PS600-VB. Be sure to read the "Safety Precautions" section for correct use. After reading this Installation Guide, keep it in a readily accessible location for future reference.
For the installation of this camera recessed into a ceiling or wall using the recessed mounting kit (sold separately), please read the "Recessed Mounting Kit SR600-VB Installation Guide" included with the recessed mounting kit.
When using the heater unit (sold separately), please read the "Heater Unit HU600-VB User Manual" included with the heater unit.
The detailed procedures for using this camera are explained in the "Operation Guide". Read these guides carefully before using the camera to ensure correct use.

* For the latest information (firmware and included software, user manuals, operating environment, etc.), please refer to the Canon Web Site.

⚠WARNING H610D M600D To reduce a risk of fire or electric shock, do not expose this product to rain or moisture.

⚠Caution Request a professional installer for all camera installation work. Never try to install the camera yourself. Doing so may result in unforeseen accidents such as dropping the camera or electric shock.

Write the serial number and MAC address of the camera (printed on the seal at the bottom of the camera) in the field below before storing this Installation Guide in a safe location.

Serial number _____

MAC Address _____

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Check Included Items

This product comes with the following items. If any item is missing, contact the dealer where you purchased the product.

1. Camera (VB-H610VE/VB-H610D/ VB-M600VE/VB-M600D)
2. Power connector
3. Safety wire
4. Audio interface cable
5. Template
6. Dome case lock screw wrench (VB-H610VE/VB-M600VE only)

for VB-H610D/ VB-M600D | for VB-H610VE/ VB-M600VE

7. Setup CD-ROM
8. Installation Guide (This document)
9. Warranty card
10. Notice

European Union (and EEA) only.

These symbols indicate that this product is not to be disposed of with your household waste, according to the WEEE Directive (2002/96/EC), the Battery Directive (2006/66/EC) and/or national legislation implementing those Directives.

If a chemical symbol is printed beneath the symbol shown above, in accordance with the Battery Directive, this indicates that a heavy metal (Hg = Mercury, Cd = Cadmium, Pb = Lead) is present in this battery or accumulator at a concentration above an applicable threshold specified in the Battery Directive.

This product should be handed over to a designated collection point, e.g., on an authorized one-for-one basis when you buy a new similar product or to an authorized collection site for recycling waste electrical and electronic equipment (EEE) and batteries and accumulators.

Improper handling of this type of waste could have a possible impact on the environment and human health due to potentially hazardous substances that are generally associated with EEE.

Your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources.

For more information about the recycling of this product, please contact your local city office, waste authority, approved scheme or your household waste disposal service or visit

www.canon-europe.com/weee.

(EEA: Norway, Iceland and Liechtenstein)

Notes on Privacy and Publicity Rights Regarding the Use of Video/Audio

When using the camera (for video or audio recording), it is the full responsibility of the user to protect privacy and avoid any violation of publicity rights. For example, obtain consent to install the camera in advance if specific buildings or rooms are to be monitored. Canon shall have no liability whatsoever in this regard.

Legal Notice

In some cases, camera monitoring may be prohibited by law or regulation, the details of which differ by country or region. Before using the camera, check the laws or regulations of the country or region where the camera is used.

User Manuals

- Installation Guide (This document)
  This guide provides notes on camera installation and explains the procedures to install the camera onto a ceiling or wall.
- Operation Guide (Included in the Setup CD-ROM)
  This document explains the initial camera settings, Admin Tools settings, viewer operations and troubleshooting, etc.

Symbols Indicating Camera Model

Camera specific functions will be listed using the icons below.
H610VE : VB-H610VE H610D : VB-H610D
M600VE : VB-M600VE M600D : VB-M600D

Accessories

Accessories can be purchased separately as necessary.

Recessed Mounting Kit SR600-VB

This dedicated accessory is used to install the camera recessed into a wall or ceiling.

Junction Box Mounting Kit PS600-VB

This dedicated accessory is used to mount the camera to a junction box.

Heater unit HU600-VB

This dedicated accessory is attached to the interior of VB-H610VE/VB-M600VE to maintain operation temperature within the dome and achieve stable operation even in extremely cold environments.

AC Adapter PA-V17

A dedicated AC adapter for this camera.

Symbols Indicating Safety Precautions

This Installation Guide uses the following marks to indicate important information the user should know in order to use the product safely. Be sure to observe these items.

⚠ Warning	Inappropriate handling against the instruction accompanied by this sign may result in death or serious injury. Be sure to observe these warnings to ensure safety.
⚠ Caution	Inappropriate handling against the instruction accompanied by this sign may result in injury. Be sure to observe these precautions to ensure safety.
Caution	Inappropriate handling against the instruction accompanied by this sign may result in property damage. Be sure to observe these precautions.
Important	This symbol indicates important or restricted items. Be sure to read this section.
Note	Contains reference information for operation or additional explanations.

Safety Precautions

This section explains precautions that must be observed when using the camera. If they are not observed, injury, death and/or property damage may occur. Read the following information carefully and be sure to observe the precautions.

Installation Precautions

⚠ Warning

Do not install in the following places:
- Places in strong direct sunlight, near heat-generating objects, or subject to high temperatures
- Places near fire sources or flammable solvents (alcohol, thinner, fuel, etc.)
- Humid or dusty places
- Places subject to oily smoke or steam
- Places subject to sea air
- Confined or enclosed places

Fire or electric shock may result.

⚠ Caution

For installation or inspection of this camera, consult the dealer where you purchased the product.
- This installation should be made by a qualified service person and should conform to all local codes.
- When installing on a ceiling, make sure the surface is capable of withstanding the total weight of the camera and ceiling plates and is sufficiently reinforced if necessary.
- Periodically check the parts and screws for rust and to see if they have loosened, in order to prevent injuries and equipment damage due to falling items.

- Do not install in unstable places, places subject to significant vibration or impact, or places subject to salt damage or corrosive gas.
- Be sure to attach the safety wire when installing the camera.

Failure to do so may result in the camera falling or other accidents.

- Do not touch the edge of metal parts with bare hands.
- Be careful not to trap your fingers during installation of the camera.

Injury may result.

Caution

- Do not install the camera on an unstable surface.
- To maximize shock resistant specifications, do not install on insufficiently strong surfaces or surfaces subject to significant vibration (VB-H610VE/VB-M600VE).
- Take measures to remove static electricity before performing any procedures.

Malfunction may result.

- Take care not to damage wiring or pipes in the room.

Damage to peripheral items may result.

Precautions for Installing the Camera Outdoors (VB-H610VE/VB-M600VE)

When installing the VB-H610VE/VB-M600VE outdoors, observe the following precautions to retain waterproof/dustproof capabilities.
- Be sure to install the camera under eaves or other places out of direct sunlight.
- Install the camera in a place unexposed to long periods of direct rainfall.
- When mounting the camera onto a wall or other upright surface, position the wiring hole straight down to prevent rain infiltration.
- If wiring the camera through the wiring hole on the bottom, use silicone sealant or a rubber mat to ensure waterproofing. Also use an insect repellent sponge if necessary.
- If wiring with a composite pipe (NPT 3/4 inch threaded hole) attached to the wiring hole, wrap teflon tape around the tip of the pipe, clear any debris from the wiring hole and firmly tighten the pipe. Apply silicone sealant after attaching the pipe.
- Firmly fix the dome case to the main unit of the camera with the lock screws, taking care not to pinch cables between the main unit and dome case.

Precautions for Use

⚠ Warning

- If you discover defective conditions such as smoke, strange sounds, heat or strange odors, immediately stop using the camera and contact your closest dealer.

Fire or electric shock may result from continued use of the product.

- Do not disassemble or modify the camera.
- Do not damage the connecting cable.
- Do not spill water or other liquid inside the camera, spray the camera with water, or otherwise make it wet.
- Do not insert foreign objects into the camera.
- Do not use flammable sprays near the camera.
- Do not leave LAN cables, external power supplies or AC adapter (sold separately) power connectors connected when the camera is not in use for long periods.
- Do not use flammable solvents such as alcohol, paint thinner or benzine when cleaning the camera.

Fire or electric shock may result.

Notes on Power Supply

⚠ Warning

- Only use the dedicated AC Adapter PA-V17 (sold separately) for AC power.
- Do not set any heavy objects on the power cable.
- Do not pull, forcibly bend, scratch, or modify the power cable.
- Do not cover or wrap the AC adapter (sold separately) with cloth or blankets.

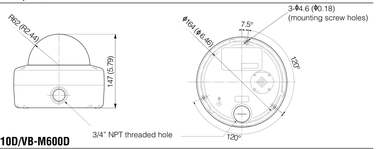
Fire or electric shock may result.
Be sure to read the user manual for the PA-V17 (sold separately) before use.

Caution

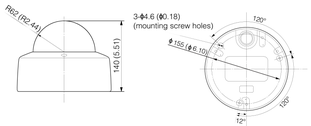
- After turning off the power, wait for at least five seconds before turning the power on again. If the power is turned on again too quickly, the camera may operate poorly.

External Dimensions

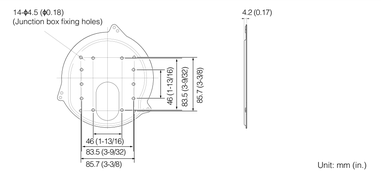
VB-H610VE/VB-M600VE



VB-H610D/VB-M600D



Junction Box Plate



Unit: mm (in.)

Main Specifications

Camera

Image Sensor	1/3 type CMOS (primary color filter)
Number of Effective Pixels	H610VE H610D: Approx. 2.1 million pixels M600VE M600D: Approx. 1.3 million pixels
Scanning Method	Progressive
Lens	H610VE H610D: 3x optical (4x digital) zoom lens (electric drive) M600VE M600D: 3x optical zoom lens (electric drive)
Focal Length*1	2.8 (W) – 8.4 mm (T)
F-number	F1.2 (W) – F2.0 (T)
Viewing Angle	H610VE H610D: Horizontal: 111.0° (W) – 36.5° (T) Vertical: 60.1° (W) – 20.5° (T) M600VE M600D: Horizontal: 101.2° (W) – 33.7° (T) Vertical: 74.7° (W) – 25.3° (T)
Day/Night Switch	Auto/Manual
Min. Subject Illumination	
Day Mode (color)	H610VE H610D: 0.3 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE) 0.02 lux (F1.2, shutter speed 1/2 sec., when smart shade control is off, 50IRE) 0.008 lux (F1.2, shutter speed 1/2 sec., when smart shade control is on, 50IRE) M600VE M600D: 0.25 lux (F1.2, Shutter Speed 1/30 sec., when Smart Shade Control is off) 0.07 lux (F1.2, Shutter Speed 1/8 sec., when Smart Shade Control is off) 0.018 lux (F1.2, Shutter Speed 1/8 sec., when Smart Shade Control is on)
Night Mode (monochrome)	H610VE H610D: 0.015 lux (F1.2, shutter speed 1/30 sec., when smart shade control is off, 50IRE) 0.001 lux (F1.2, shutter speed 1/2 sec., when smart shade control is off, 50IRE) 0.0005 lux (F1.2, shutter speed 1/2 sec., when smart shade control is on, 50IRE) M600VE M600D: 0.008 lux (F1.2, Shutter Speed 1/30 sec., when Smart Shade Control is off) 0.002 lux (F1.2, Shutter Speed 1/8 sec., when Smart Shade Control is off) 0.001 lux (F1.2, Shutter Speed 1/8 sec., when Smart Shade Control is on)
Focus	One-shot AF/Manual/Fixed at infinity
Shooting Distance (from front of lens)	Day Mode: 0.3 m (12 in.) – infinity Night Mode: 1.0 m (3.3 ft.) – infinity
Shutter Speed	1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/16000*1 sec.
Exposure	Auto/Auto (Flickerless)/Auto (Shutter-priority AE)/Manual (Shutter Speed, Aperture, Gain)
White Balance	Auto/Auto Light Source (Daylight Fluorescent/White Fluorescent/Warm Fluorescent/ Mercury Lamp/Sodium Lamp/Halogen Lamp)/Lock (One-shot WB)/Manual
Metering Mode	Center-Weighted/Average/Spot
Exposure Compensation	H610VE H610D: 9 levels M600VE M600D: 7 levels
Smart Shade Control	7 levels (increases the brightness of shaded subjects in a video)
AGC Limit	H610VE H610D: 5 levels
Pan Angle Range	350° (±175°)
Tilt Angle Range	150° (±75°)
Rotation Angle Range	350° (±175°)
Moving Speed	Pan: 19.2°/sec., Tilt: 14.2°/sec., Rotation: 43.7 °/sec. When the Camera Angle Setting Tool is used

Server

Video Compression Method	JPEG, H.264
Video Size	H610VE H610D: JPEG: 1920 x 1080, 960 x 540, 480 x 270, 320 x 240 H.264: 1920 x 1080, 960 x 540, 480 x 270 M600VE M600D: JPEG: 1280 x 960, 640 x 480, 320 x 240, 160 x 120 H.264: 1280 x 960, 640 x 480, 320 x 240
Video Quality	JPEG, H.264: 5 levels
Frame Rate*2	JPEG: 0.1 – 30 fps H610VE H610D: H.264: 1/2/3/5/6/10/15/30 fps M600VE M600D: H.264: 10/15/30 fps
Max. Frame Rate	H610VE H610D: 1920 x 1080 (when streaming): 30 fps M600VE M600D: 1280 x 960 (when streaming): 30 fps
I-Frame Interval	H610VE H610D: 0.5/1/1.5/2/3/4/5 sec.
Simultaneous Client Access	Max. 30 Clients + 1 Admin Client H.264: Max. 10 Clients
Camera Control	Administrator, Authorized user, Guest user (level of control varies depending on user) Max. 50 user names and passwords registered for authorized users.
Access Control	User authority (user name and password), Host Access Restrictions (IPv4, IPv6)
Encrypted Communications	SSL/TLS, IPsec (Auto Key Exchange/Manual)
Protocol	IPv4: TCP/IP, UDP, HTTP, FTP, SNMP (MIB2), SMTP (Client), DHCP (Client), DNS (Client), ARP, ICMP, POP3, NTP, SMTP authentication, RTSP, WV-HTTP (Canon proprietary), ONVIF IPv6: TCP/IP, UDP, HTTP, FTP, SMTP (Client), DHCPv6 (Client)*4, DNS (Client), ICMPv6, POP3, NTP, SMTP authentication, RTSP, WV-HTTP (Canon proprietary), ONVIF
AutoIP	H610VE H610D: Available
Audio Compression Method	G.711 μ-law (64 kbps)
Audio Communication Method	Full-duplex (two-way) Echo cancellation function compliant Sound Transfer Protocol by Canon
Audio File Playback*3	Available (audio files can be played back when an event is triggered by the intelligent function or external device input.)
Privacy Mask	Number of registration: Max. 8 places, Number of mask colors: 1 (select from 9 colors)
Preset	H610VE H610D: Max. 20 positions (Preset Tour capable)
Intelligent Function	<Video> Detection Types: moving object detection, abandoned object detection, removed object detection, camera tampering detection, and passing detection*4 Detection Settings: Max. 15 <Volume> Volume Detection
Event Trigger Type	External Device Input, Intelligent Function (Video), Intelligent Function (Volume), Timer
Image Upload	FTP/HTTP/SMTP (e-mail) Temporary storage memory in camera H610VE H610D: Max. approx. 5 MB M600VE M600D: Max. approx. 4 MB Frame Rate: Max. 10 fps
Event Notification	HTTP/SMTP (e-mail)
Image Cropping Function	H610VE H610D: Digital PTZ Cropping sizes : 640 x 360/512 x 288/ 384 x 216/256 x 144/128 x 72
On-Screen Display	Available
Daylight Saving Time	H610VE H610D: Available
Language	English/German/French/Italian/Spanish/Japanese

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Interface

Network Terminal	LAN x 1 (RJ45, 100Base-TX (auto/full-duplex/half-duplex))
Audio Input Terminal (common for LINE IN & MIC IN)	ϕ3.5 mm (ϕ0.14 in.) mini-jack connector (monaural) Connect via an audio interface cable (included) Switch LINE IN/MIC IN in the setting page. LINE IN x 1 (connect to an amplifier microphone) or MIC IN x 1 (connect to a microphone w/o amplifier)
Audio Output Terminal (LINE OUT)	ϕ3.5 mm (ϕ0.14 in.) mini-jack connector (monaural) Connect via an audio interface cable (included) LINE OUT x 1 (connect to an amplifier speaker)
External Device I/O Terminal	Input x 2, Output x 2
Memory Card	SD Memory Card, SDHC Memory Card, SDXC Memory Card*4 Compatible. Capacity: M600VE M600D Max. approx. 32 GB Frame Rate: Max. 1 fps

Others

Operating Environment	Temperature: -10°C – +50°C (+14°F – +122°F), Humidity: 5% – 85% (without condensation) H610VE M600VE Temperature: -30°C – +50°C (-22°F – +122°F), Humidity: 5% – 85% (without condensation)* *Equipped with separately sold Heater Unit HU600-VB
Power Supply	AC Adapter: PA-V17 (100 – 240 V AC) (sold separately) External power source: 24 V AC/12 V DC H610VE M600VE Heater Unit HU600-VB (sold separately): 24 V AC only
Power Consumption	When using PoE: H610VE Max. approx. 8.4 W H610D Max. approx. 7.8 W M600VE M600D Max. approx. 8.6 W When using AC Adapter PA-V17: H610VE Max. approx. 10.72 W H610D Max. approx. 10.2 W M600VE M600D Max. approx. 10.9 W When using DC: H610VE Max. approx. 9.0 W H610D Max. approx. 8.3 W M600VE M600D Max. approx. 9.0 W When using AC: H610VE Max. approx. 8.1 W H610D Max. approx. 7.5 W M600VE M600D Max. approx. 8.3 W H610VE Max. approx. 18.7 W* M600VE Max. approx. 18.9 W* *when separately sold Heater Unit HU600-VB installed
Dimensions	H610VE M600VE (ϕ x H) ϕ180 x 147 mm (ϕ7.09 x 5.79 in.) H610D M600D (ϕ x H) ϕ186 x 140 mm (ϕ7.32 x 5.51 in.)
Weight	H610VE Approx. 1920 g (4.24 lb.) (camera only) Approx. 162 g (5.8 oz.) (Junction Box Mounting Kit) M600VE Approx. 1910 g (4.22 lb.) (camera only) Approx. 162 g (5.8 oz.) (Junction Box Mounting Kit) H610D Approx. 1200 g (2.65 lb.) (camera only) Approx. 159 g (5.7 oz.) (Junction Box Mounting Kit) M600D Approx. 1200 g (2.65 lb.) (camera only) Approx. 159 g (5.7 oz.) (Junction Box Mounting Kit)
Impact Resistance	H610VE M600VE External materials: aluminum alloy, Dome: polycarbonate plastics With lens shock absorbing mechanism Estimated shock resistant: 50J (based on Canon's test method)
Dust-resistant/ Waterproof Specification	H610VE M600VE IP66-rated (IEC60529) Only applies if properly installed and adequately waterproofed

*1 (W): maximum wide angle, (T): maximum telephoto
*2 The frame rate may be reduced due to Viewer PC's specs, the number of clients accessing at the same time, network loads, image quality setting, type or movement of the subject or other reasons.
*3 A third-party amplifier speaker is necessary.
*4 VB-H610VE/VB-H610D specific function

The contents of this guide are subject to change without any prior notice.

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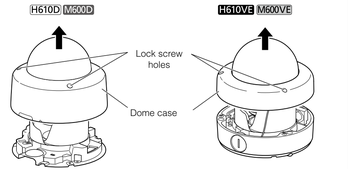

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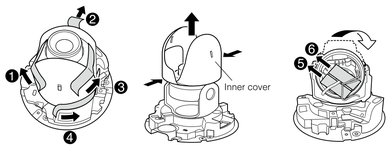

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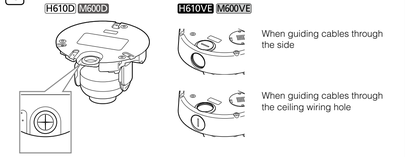

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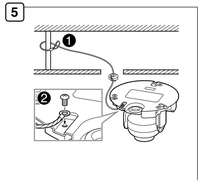

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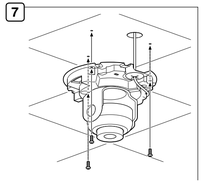

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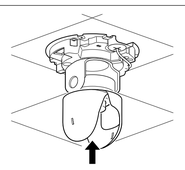

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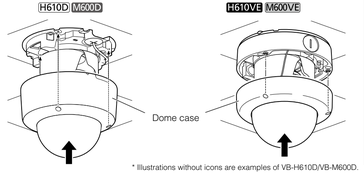


* Illustrations without icons are examples of VB-H610D/VB-M600D.

Installing the Camera

The following describes procedures for mounting the camera to a ceiling.
Before installing the camera, set the IP address and other network information on the camera using the "VB Initial Setting Tool" on the Setup CD-ROM.
For details on how to operate the "VB Initial Setting Tool", see "Operation Guide".

1 Determine an installation position for the camera and drill holes in the ceiling

Use the included template to determine the positions of the fixing screw holes and wiring hole (ϕ40 mm (ϕ1.6 in.)) according to the camera orientation. Next, cut out the wiring hole, and drill the fixing screw holes in the the ceiling.

2 Loosen the three lock screws on the dome case and remove the dome case

H610VE M600VE

Special temper-resistant screws are used for the dome case lock screws. Use the included dome case lock screw wrench.

3 Remove the tape and the inner cover

Remove the 4 pieces of tape that prevent lens rotation during shipping, and push the inner cover in the direction of the arrows to remove it. Then remove the 2 pieces of tape attached to the base of the lens.

4 Open the wiring hole according to the installation method

H610D M600D

Use a box cutter to cut a cross shape into the wiring hole cover in order to guide cables through. Do not remove the wiring hole cover.

H610VE M600VE

Use a coin to unscrew the wiring hole cover from the side through which cables will be guided. Screw the wiring hole cover into the other wiring hole. You can fit a composite pipe (NPT 3/4 inch threaded hole) to the wiring hole.

5 Secure the safety wire

Securely attach the safety wire to an anchor or structure. After securing one end of the safety wire to the ceiling, secure the other end to the camera using the screw that is fastened to the camera.

6 Guide the LAN cable through the wiring hole

When using an external power supply, guide the power interface cable through the wiring hole. Guide the I/O interface cable and the audio interface cable (included) through the wiring hole if necessary.

Important

When using the AC Adapter PA-V17 (sold separately), cut the cable tie and remove the ferrite core. Be sure not to damage the power cable when cutting the cable tie.

7 Fix the camera to the ceiling

Fix the camera at three points to the ceiling using the appropriate screws. Three ϕ4.5 mm (ϕ0.18 in.) ceiling fixing screw holes are located on the camera. You must provide screws that correspond to the ceiling fixing screw holes.

8 Wire the cables

Wire the cables referring to "Cable Wiring Method".

Important

When wiring is complete, seal the wiring hole to keep out insects and dust.

9 Attach the inner cover

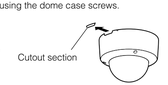
Attach the inner cover to its original position.

10 Attach the dome case

Firmly fix the dome case at three points to the camera using the dome case screws.

H610D M600D

If the cables cannot be stored above a ceiling made of concrete, etc., break the cutout section of the dome case using diagonal pliers to create a cutout through which to guide the cables.



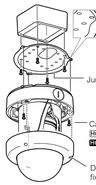
Important H610VE M600VE

When attaching the dome case, be sure not to pinch cables between the camera and dome case. Pinched cables may impair dust and waterproofing capabilities.

11 Set the camera angle

When installation is complete, use the Camera Angle Setting Tool to adjust the pan, tilt, rotation, zoom (and focus) see "Operation Guide" > "Camera Angle Setting Tool").

Using a Junction Box


H610D M600D
Mounting hole (inner side)
H610VE M600VE
Mounting hole (outer side)
Junction box plate
Camera fixing screw (included)
H610D M600D Short screw x 3
H610VE M600VE Long screw x 3
Dome case fixing screw x 3

* Diagram of VB-H610VE.

Use the junction box plate (included with the separately sold junction box mounting kit PS600-VB) to mount the camera to the junction box.

① Attach the junction box plate to the junction box with screws that match the screw holes in the junction box.
② Guide the cables through the wiring hole and mount the camera to the junction box plate using the 3 included camera fixing screws (M4).
The camera fixing screws differ in length depending on the camera. Use short screws for VB-H610D/VB-M600D, and long screws for VB-H610VE/VB-M600VE.
③ Wire the cables and attach the inner cover and dome case.

Using an SD Memory Card

Inserting the card

Push the SD memory card as far as possible into the SD card slot with the label facing outward.

Removing the card

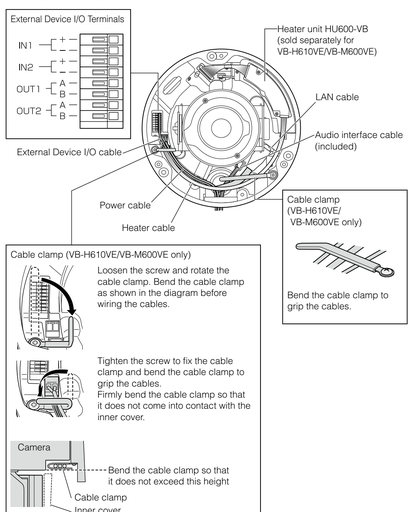
Push the SD memory card in all the way until the card slightly pops out. Pinch the card and remove.

Important

- Insert the SD memory card before attaching the dome case.
- Make sure the SD memory card is not write-protected.
- When using an SD memory card with the camera for the first time, it is recommended to format the card after inserting it into the camera (see "Operation Guide" > "Setting Page" > "Memory Card").

Cable Wiring Method

For VB-H610VE/VB-M600VE, secure the various cables with the cable clamps fastened to the camera to prevent damage to cables or connectors due to vibration, etc.
*The diagram is a wiring example for VB-H610VE/VB-M600VE.

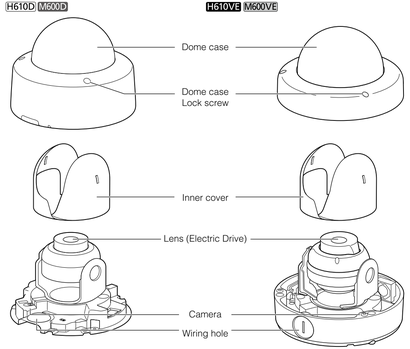


Cable clamp (VB-H610VE/VB-M600VE only)
Loosen the screw and rotate the cable clamp. Bend the cable clamp as shown in the diagram before wiring the cables.
Tighten the screw to fix the cable clamp and bend the cable clamp to grip the cables.
Firmly bend the cable clamp so that it does not come into contact with the inner cover.
Camera
Bend the cable clamp so that it does not exceed this height
Cable clamp
Inner cover

Part Names

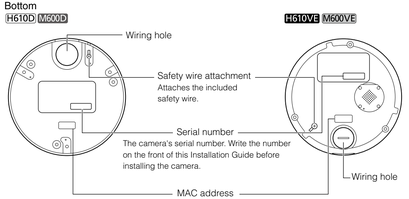
Dome Case/Inner Cover/Camera

H610D M600D H610VE M600VE



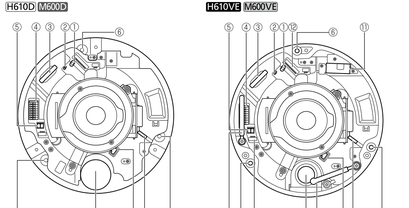
Bottom

H610D M600D H610VE M600VE


Wiring hole
Safety wire attachment
Attaches the included safety wire.
Serial number
The camera's serial number. Write the number on the front of this Installation Guide before installing the camera.
Wiring hole
MAC address
The camera's unique address. Write the address on the front of this Installation Guide before installing the camera.

Top view of the camera interior

H610D M600D H610VE M600VE



① Reset switch
Turn on the power while pushing this switch using a sharp object. Continue to push the switch for 5 seconds or more to restore all factory settings except for the date and time.
② LED
The blue LED light comes on.
On: When powered on, during reboot
Off: During normal use
③ SD card slot
④ External device I/O terminals
⑤ Power connection terminal
⑥ Installation screw holes
Used when securing the camera to the installation surface, the junction box mounting kit (sold separately), or the recessed mounting kit (sold separately).
⑦ Wiring hole
⑧ Audio I/O terminal
Connect the included audio interface cable here to connect audio input and output devices to the camera.
⑨ 100BT LAN connector
⑩ Cable clamps H610VE M600VE
⑪ Fan H610VE M600VE
⑫ Heater connection terminal H610VE M600VE

Connecting the Camera

Power Connection

Power can be supplied to the camera in the three ways described below.

■ PoE (Power over Ethernet)

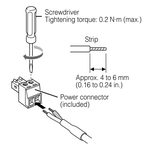
The camera supports PoE functions. Power can be supplied to the camera by using a LAN cable to connect it to a PoE HUB that conforms to the IEEE 802.3af standard.

Important

- Check with your dealer for more information about PoE HUB and Midspan technology.
- Some PoE HUBs allow current limits for each port, but applying limits may interfere with performance. If using this type of PoE HUB, do not limit the operating current.
- Some PoE HUBs have total consumption current limits for ports, which can interfere with performance when multiple ports are in use. For more information, check the instruction guide for your PoE HUB.
- Use a category 5 or higher cable 100 m (328 ft.) or less in length for the LAN cable that connects the camera and the PoE HUB.
- When the camera is connected to a switching HUB, changing the connection while the camera is operating may cause the HUB learning function to interfere with communication. Do not change the connection when the camera is operating.
- The camera can also be connected to an AC adapter (sold separately) while receiving power from a PoE HUB. In such cases, the PoE power supply is given priority, and the camera does not use the power supply from the AC adapter (sold separately). When the PoE power supply is disconnected, power is supplied automatically from the AC adapter (sold separately). Midspan (a LAN cable power supply device) is a device that, like a PoE HUB, supplies power to the camera via a LAN cable.

■ External Power Supply

12 V DC or 24 V AC input can be used.
Connect the included power connector as shown below.



For 12 V DC and 24 V AC input, use a power supply insulated from 100 V AC.
12 V DC can be connected in a non-polar configuration.

Important

- The power supply should be within the following voltage range.
- 24 V AC: Voltage fluctuation within ±10% of 24 V AC (50 Hz or 60 Hz ±0.5 Hz or less)
  Current supply capacity of at least 1.0 A per camera
- 12 V DC: Voltage fluctuation within ±10% of 12 V DC
  Current supply capacity of at least 1.5 A per camera
- When using a 12 V DC battery power supply, be sure to connect resistors of at least 0.5 – 1.0 Ω/20 W in series to the power line.
- For an external power supply, use a double-insulated device.

Recommended Power Cables [Reference]

Cable (AWG)		24	22	20	18	16
Conductor diameter	mm (in.)	ϕ0.52 (ϕ0.020)	ϕ0.65 (ϕ0.026)	ϕ0.82 (ϕ0.032)	ϕ1.03 (ϕ0.041)	ϕ1.30 (ϕ0.051)
12 V DC maximum cable length	m (ft.)	5 (16.4)	9 (29.5)	14 (45.9)	23 (75.5)	32 (105.0)
24 V AC maximum cable length	m (ft.)	11 (36.1)	18 (59.1)	29 (95.1)	46 (150.9)	64 (210.0)

Use UL cable (UL-1015 or equivalent) for 12 V DC or 24 V AC wiring.

■ AC Adapter

Use the dedicated AC Adapter PA-V17 (sold separately).

Note

- The camera does not have a power switch. Connecting and disconnecting the LAN cable (PoE power supply), AC adapter, or external power supply plug turns the power ON and OFF, respectively.
- When the camera needs to be rebooted, perform the reboot operation from the camera setting page (see "Operation Guide" > "Setting Page" > "Maintenance").
- When using the heater unit HU600-VB (sold separately), use 24 V AC for the VB-H610VE/VB-M600VE power supply. PoE, 12 V DC and the AC adapter cannot be used.

External Device I/O Terminals

External device I/O terminals consist of two input and output systems each. Viewer can be used to check external device input status and control output to an external device (see "Operation Guide" > "Selecting the External Device Output" and "Displaying Event Status").

■ External Device Input Terminals (IN1, IN2)

External device input terminals consist of two sets (IN1, IN2) of two terminals, with the negative terminals connected to the camera interior GND. Connecting cables to the positive and negative terminals and opening or closing the circuit notifies the Viewer.

Important

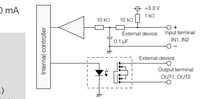
- When connecting sensors and switches, connect terminals that are electrically isolated from the respective power and GND.
- Do not push the external device I/O terminal button with too much force. Doing so may cause the button to remain pushed-in.

■ External Device Output Terminals (OUT1, OUT2)

External device output terminals consist of two sets (OUT1, OUT2) of two terminals. The sets have no polarity. Controls from the viewer can be used to open and close the circuit between the terminals. Using optical couplers, the output terminals are isolated from the camera's internal circuit.

The load connected to the output terminals should be within the following rating range.
Rating between output terminals:
Maximum voltage 50 V DC
Continuous load current at or below 100 mA
On resistance: Max. 30Ω

Internal Connection Diagram

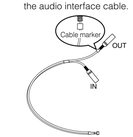


Note

Adaptive wiring for external device cables
Solid conductor AWG: No. 28 – 22
Conductor size: ϕ0.32 – ϕ0.65 mm (ϕ0.013 – ϕ0.026 in.)
Cable strip should be approx. 8 – 9 mm (0.31 – 0.35 in.).

Audio Input/Output Terminals

Each audio input/output terminal has one input system and one output system.
Connecting the camera to an audio input/output device such as a microphone or a speaker with an amplifier allows you to send/receive audio through the viewer.
Use the included audio interface cable to connect audio input/output devices to the camera.
Use the ϕ3.5 mm (ϕ0.14 in.) monaural mini-jack connector to connect an audio output device with the audio interface cable.



The long end (has cable marker) from the bifurcation point in the cable corresponds to the audio output terminal. The short end (does not have cable marker) from the bifurcation point in the cable corresponds to the audio input terminal.

■ Audio Input Dual LINE IN/MIC IN (monaural input)

Although the camera has a single audio input system, it supports two types of microphone input: LINE IN and MIC IN. Before using the audio input, change the [Audio Input] on the Setting Page (see "Operation Guide" > "Audio Input"). LINE IN is selected by default.
Input terminal: ϕ3.5 mm (ϕ0.14 in.) mini-jack (monaural)

- Dynamic MIC IN
  Input impedance: 1.75 kΩ ± 20%
  * Supported microphones: Output impedance: 400Ω – 600Ω
- Condenser MIC IN
  Input impedance (microphone bias resistance): 2.2 kΩ ± 20%
  Microphone power supply: plug-in power (voltage: 1.8 V)
  * Supported microphones: Condenser microphones with plug-in power support
- LINE IN
  Input level: Max. 1 Vp-p
  * Use a microphone with an amplifier.

■ Audio Output Terminal LINE OUT (monaural output)

Connect the camera to a speaker with an amplifier. Audio can be sent to the speaker from Viewer.
Output terminal: ϕ3.5 mm (ϕ0.14 in.) mini-jack (monaural)
Output level: Max. 1 Vp-p
* Use a speaker with an amplifier.

Important

- Using the wrong settings in [Audio Input] may damage the camera and/or microphone. Be sure to configure settings correctly.
- Microphone characteristics may affect volume and sound quality.
- Audio may be interrupted depending on PC characteristics and network environment.
- Video and audio can be streamed to up to 30 clients. However, audio may be interrupted when streaming to many clients or using SSL.
- Audio may be interrupted when using antivirus software.
- Connecting and disconnecting the LAN cable interrupts the audio. Use the viewer to reconnect.